

Application No. 10/652,007
Amendment dated August 12, 2005
Reply to Office Action of June 13, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-36 (Cancelled)

37. (Previously presented) The low dielectric constant fluorine and carbon-doped silicon oxide dielectric material of claim 50 wherein at least one of the carbon atoms participating in said C-C bond is also bonded to at least one fluorine atom.

38-40. (Cancelled)

41. (Currently Amended) The low dielectric constant fluorine and carbon-doped silicon oxide dielectric material of claim 52 ^{[[39]]} wherein said oxidizing agent comprises hydrogen peroxide.

42. (Currently Amended) The low dielectric constant fluorine and carbon-doped silicon oxide dielectric material of claim 52 ^{[[39]]} wherein said R₁ comprises hydrogen.

43. (Currently Amended) The low dielectric constant fluorine and carbon-doped silicon oxide dielectric material of claim 52 ^{[[39]]} wherein said R₂ comprises an organofluoro moiety containing CF₃.

44. (Currently Amended) The low dielectric constant fluorine and carbon-doped silicon oxide dielectric material of claim 52 ^{[[39]]} wherein said R₂ consists essentially of C and F atoms.

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45. (Currently Amended) The low dielectric constant fluorine and carbon-doped silicon oxide dielectric material of claim 52 [[39]] wherein said R_2 consists essentially of C and F atoms alone.

46. (Currently Amended) The low dielectric constant fluorine and carbon-doped silicon oxide dielectric material of claim 52 [[39]] wherein said R_2 comprises consists essentially of C and F atoms and R_3 consists essentially of an alkyl.

47. (Currently Amended) The low dielectric constant fluorine and carbon-doped silicon oxide dielectric material of claim 52 [[39]] wherein said R_3 contains CH_3 moieties.

48. (Currently Amended) The low dielectric constant fluorine and carbon-doped silicon oxide dielectric material of claim 52 [[39]] wherein said R_4 comprises a leaving group.

49. (Currently Amended) The low dielectric constant fluorine and carbon-doped silicon oxide dielectric material of claim 52 [[39]] wherein said R_4 comprises hydrogen.

50. (Previously Presented) A low dielectric constant fluorine and carbon-doped silicon oxide dielectric material for use in an integrated circuit structure and further characterized by:

- (a) each silicon atom is bonded to at least 1 oxygen atom ;
- (b) silicon atoms bonded to carbon atoms;
- (c) at least 1 carbon atom bonded to 1 to 2 fluorine atoms; and
- (d) the presence of at least 1 C-C bond.

51. (Previously Presented) A low dielectric constant fluorine and carbon-doped silicon oxide dielectric material for use in an integrated circuit structure wherein all silicon atoms are bonded to at least 1 oxygen atom.

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52. (New) A low dielectric constant fluorine and carbon-doped silicon oxide dielectric material for use in an integrated circuit structure wherein all silicon atoms are bonded to at least 1 oxygen atom, said low dielectric constant fluoride and carbon-doped silicon oxide dielectric material comprising the reaction product of an oxidizing agent and one or more silanes comprising one or more organofluoro silanes having the formula $\text{SiR}_1\text{R}_2\text{R}_3\text{R}_4$, wherein:

- (a) R_1 is selected from the group consisting of H, a 3 to 5 carbon organo moiety, and an oxyorgano moiety;
- (b) R_2 is an organofluoro moiety; and
- (c) R_3 and R_4 are independently selected from the group consisting of the same or different leaving group, the same or different organofluoro moiety, and the same or different $((\text{L})\text{Si}(\text{R}_5)(\text{R}_6))_n(\text{R}_7)$; wherein n ranges from 1 to 5; L is O or $(\text{C}(\text{R}_8)_2)_m$; m ranges from 1 to 4; each of the n R_5 's and n R_6 's is independently selected from the group consisting of the same or different leaving group and the same or different organofluoro moiety; R_7 is selected from the group consisting of a leaving group and an organofluoro moiety; and each of the $2n*m$ or fewer R_8 's is selected from the group consisting of F and the same or different organofluoro moiety.